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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/776,555

02/10/2004

Joel V. Madison

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7590

06/25/2008

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EXAMINER

KIM, JOHN K

ART UNIT

PAPER NUMBER

2834

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,555	<b>Applicant(s)</b> MADISON, JOEL V.	
	<b>Examiner</b> JOHN K. KIM	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant Admitted Prior Art) in view of Fisher et al (US 6215214).

As for claim 1, AAPA teaches (in Figs. 1-2) for a turbine generator or pump having main bearings separated by a span of shaft and a thrust equalizing mechanism adjacent one (6) of said main beatings. AAPA, however, failed to teach or suggest an improvement comprising a stationary spacer interposed between the thrust equalizing mechanism and its adjacent main bearing to reduce the span between said main bearings. In the same field of endeavor, Fisher teaches (in Fig. 5) a stationary spacer (268) interposed between the thrust equalizing mechanism (258) and its adjacent main bearing (216) to reduce the span (256) between said main bearings (216, 218). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Fisher with that of AAPA for preventing deflection of rotor shaft during heavy side loading. (col. 2, line 29-34)

As for claim 5, AAPA teaches (in Figs. 1-2) for a turbine generator or pump having main bearings separated by a span of shaft (4) and a thrust equalizing mechanism which includes a stationary thrust plate (8) adjacent one of the main beatings (6) and a variable orifice (20) defined between the thrust plate (8) and a throttle plate (10) affixed to the shaft (4). AAPA, however, failed to teach or suggest an

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improvement comprising a stationary length compensator interposed between the thrust plate and its adjacent main bearing to space said adjacent main bearing from the thrust plate in order to reduce the span between said main bearings. In the same field of endeavor, Fisher teaches (in Fig. 5) a stationary length compensator (268) interposed between the thrust plate (260) and its adjacent main bearing (216) to space said adjacent main bearing from the thrust plate in order to reduce the span (256) between said main bearings (216, 218). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Fisher with that of AAPA for preventing deflection of rotor shaft during heavy side loading. (col. 2, line 29-34)

As for claim 9, AAPA teaches (in Figs. 1-2) for a turbine generator or pump having main bearings separated by a span of shaft and a thrust equalizing mechanism which includes a stationary thrust plate (8) adjacent one of the main bearings (6). AAPA, however, failed to teach or suggest an improvement comprising stationary means interposed between the thrust plate and its adjacent main bearing to space said adjacent main bearing from the thrust plate in order to reduce the span between said main bearings. In the same field of endeavor, Fisher teaches (in Fig. 5) stationary means (268) interposed between the thrust plate (260) and its adjacent main bearing (216) to space said adjacent main bearing from the thrust plate in order to reduce the span (256) between said main bearings (216, 218). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to

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combine the teaching of Fisher with that of AAPA for preventing deflection of rotor shaft during heavy side loading. (col. 2, line 29-34)

5. Claims 2-4, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant Admitted Prior Art) in view of Fisher et al (US 6215214) and in further view of Agnes et al (US 6570284) and Brown (US 4729160).

As for claim 2, AAPA and Fisher teach the claimed invention as applied to claim 1 above. The references, however, failed to teach the spacer is composed of material that shrinks less than the shaft of the generator. In the same field of endeavor, Agnes teaches (in Fig. 7) a spacer (54) is composed of material (fiberglass) that shrinks less than the shaft (50) of the motor. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Agnes with that of AAPA for insulation. Agnes, however, failed to teach the shaft is for generator and the shaft material shrinks not less than the fiberglass spacer. In the same field of endeavor, Brown teaches fiberglass less than the coefficient of thermal expansion for the stainless steel. (col. 1, line 63- col. 2, line 25) Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine teachings of Brown to AAPA, Fisher and Anges for less dimensional affects to the assembly.

As for claims 6 and 10, except claim dependency, Claims contain the same limitation as claim 2 and is rejected for the same reason set forth in connection with the rejection of claim 2 above.

As for claim 3, AAPA and Fisher teach the claimed invention as applied to claim 1 above. AAPA and Fisher however failed to teach the height of the spacer is selected according to desired thrust equalizing mechanism operating parameters over a temperature range. In the same field of endeavor, Agnes teaches (in Fig. 7) a spacer (54) is selected for fiberglass and therefore it has operating parameters over a temperature range as the maximum temperature of fiberglass (at least 1550 degree F) typically exceeds the design temperature of generator/pump (typically 180 degree C or less). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made for reliability of the generator/pump

As for claims 4, 7, 8, 11 and 12, except claim dependency, Claims contain the same limitation as claim 3 and is rejected for the same reason set forth in connection with the rejection of claim 3 above.

6. Claim 3 is alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant Admitted Prior Art) in view of Fisher et al (US 6215214).

As for claim 3, AAPA and Fisher teach the claimed invention as applied to claim 1 above. AAPA and Fisher disclose the claimed invention except for height of the

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spacer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a feasible value for operation, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN K. KIM whose telephone number is (571)270-5072. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-270-6072.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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JK

/Darren Schuberg/  
Supervisory Patent Examiner, Art Unit 2834